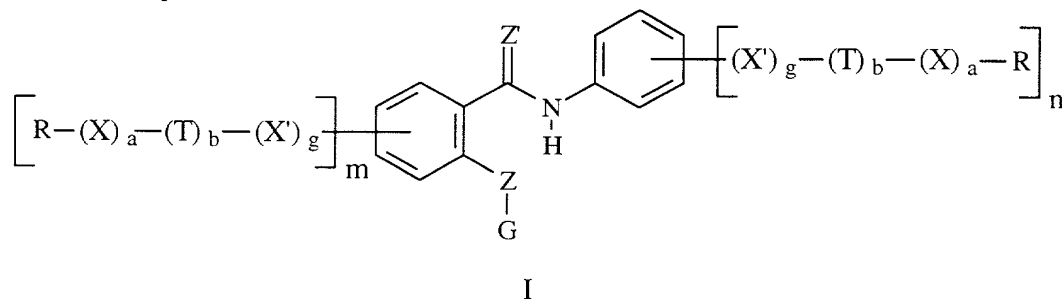


WHAT IS CLAIMED IS:

1. An antibacterial composition comprising:

A) a compound of formula I,



wherein m is an integer from 0 to 4; n is an integer from 0 to 5; the sum of m+n is greater than zero; a is 0 or 1; b is 0 or 1; g is 0 or 1; when b is 0, one of a and g must be 0; Z and Z' are independently selected from O and S; X and X', when present, are selected from O, S, and NR¹, where R¹ is independently selected from the group consisting of H, C₁-C₁₆ linear or branched, substituted or unsubstituted alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, alkaryl, aralkyl, and aryl; T, when present, is selected from C=O, C=S, S=O, and SO₂; when T is S=O or SO₂, X and X' may not be S; when either a, b or g is 1 for a radical R-(X)_a-(T)_b-(X')_g, R for that radical is independently selected from the group consisting of H, C₁-C₁₆ linear or branched, substituted or unsubstituted alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, alkaryl, aralkyl, and aryl; when a, b and g are all 0 for a radical and neither Z nor Z' is S, R for that radical may be further selected from the group consisting of F, Cl, Br, I, CN, R₂N→O, NO₂; when Z or Z' is S, R for that radical may be further selected from the group consisting of CN, R₂N→O, NO₂; when all a, b and g are 0, at least one R must be non-H; further provided that the total number of halogen atoms in the molecule excluding any present in G does not exceed two; G is H, a suitable charge balancing counterion (Mⁿ⁺)_{1/n}, or a cleaveable group selected from the group consisting of Si((O)_pR²)₃, where p is independently 0 or 1; C(O)_q((O)_pR²)_r, wherein p is independently 0 or 1 and when q is 1, r is 1, and when q is 0, r is 3; R² is independently selected from the group consisting of C₁-C₁₆ linear or branched, substituted or unsubstituted alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, alkaryl, aralkyl, and aryl, and mixtures thereof; and

B) at least one additional component selected from the group consisting of:

- i) at least 1 wt% of a surfactant, wherein the ratio of the weight of the surfactant divided by the weight of said compound I is greater than or equal to 1.0;
- ii) from 0.5% to 90% of a solvent whose Hildebrand solubility parameter d_s (cal/cm^3)^{1/2} meets the following criterion: $5 < d_s < 20$, wherein a 10wt% aqueous solution of this composition has a $\text{pH} \geq (\text{pKa} - 1)$ where pKa is the calculated pKa of the phenol or thiophenol of formula I, or when G is not H, the pKa of the phenol or thiophenol of formula I that results from replacing G with H;
- iii) a perfume wherein the perfume has a C log P greater than or equal to 2.0.
- iv) an enzyme from 0.001 to 1.0% by weight of the composition;
- v) mixtures thereof.

2. The antibacterial composition according to Claim 1 wherein the composition comprises at least 1 wt% of a cationic surfactant, wherein the ratio of the weight of the surfactant divided by the weight of said compound I is greater than or equal to 1.0; and wherein a 10 wt% aqueous solution of this composition has a pH less than or equal to 7.0.

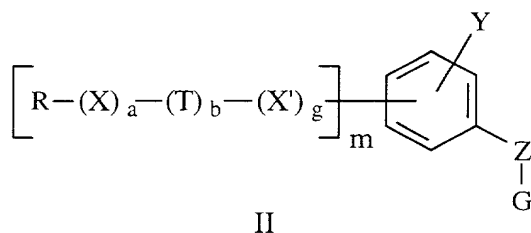
3. The antibacterial composition according to Claim 1 wherein the composition comprises at least two of said additional components.

4. The antibacterial composition according to Claim 1 wherein the antibacterial composition further comprises one or more of the following adjunct ingredients selected from the group consisting of: other solvents, other perfumes, builders, bleaches, bleach activators, bleach catalysts, enzyme stabilizing systems, chelants, optical brighteners, soil release polymers, dye transfer agents, dispersants, suds suppressors, suds boosting agents, dyes, colorants, filler salts, hydrotropes, photoactivators, fluorescers, fabric conditioners, hydrolyzable surfactants, preservatives, anti-oxidants, anti-shrinkage agents, anti-wrinkle agents, germicides, fungicides, color speckles, silvercare, anti-tarnish and/or anti-corrosion agents, alkalinity sources, solubilizing agents, carriers, processing aids, pigments and pH control agents and mixtures thereof.

5. The antibacterial composition according to Claim 1 wherein the enzyme is selected from the group consisting of: proteases, amylases, cellulases, mannanases, xyloglucanases, pectinases, lipases, laccases, peroxidases and mixtures thereof.

6. An antibacterial composition comprising:

- A) a substituted phenol or thiophenol compound of formula II:



wherein m is an integer from 0 to 4; a is 0 or 1; b is 0 or 1; g is 0 or 1; when b is 0, one of a and g must be 0; Z is selected from O and S; X and X' , when present, are selected from O, S, and NR^1 ; when either a , b or g is 1 for a radical $\text{R}-(\text{X})_a-(\text{T})_b-(\text{X}')_g$, R for that radical is independently selected from the group consisting of H, C_1 - C_{16} linear or branched, substituted or unsubstituted alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, alkaryl, aralkyl, and aryl; when a , b and g are all 0 for a radical and Z is O, R for that radical may be further selected from the group consisting of F, Cl, Br, I, CN, $\text{R}_2\text{N} \rightarrow \text{O}$, NO_2 ; T , when present, is selected from $\text{C}=\text{O}$, $\text{C}=\text{S}$, $\text{S}=\text{O}$, and SO_2 ; when T is $\text{S}=\text{O}$ or SO_2 , X and X' may not be S; Y is a radical comprising at least 1 but no more than 20 carbon atoms and containing a substituent $-\text{X}''-\text{H}$, where X'' is selected from O, S, and $\text{N}-(\text{T}')_{b'}-(\text{X}''')_{a'}-\text{R}^2$, where a' is 0 or 1, b' is 0 or 1, and X''' , when present, is selected from O, S, and NR^2 ; R^2 is independently selected from the group consisting of H, C_1 - C_{16} linear or branched, substituted or unsubstituted alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, alkaryl, aralkyl, and aryl; T' , when present, is selected from $\text{C}=\text{O}$, $\text{C}=\text{S}$, and SO_2 ; when T' is SO_2 , X''' may not be S; G is H, a suitable charge balancing counterion $(\text{M}^{n+})_{1/n}$, or a cleaveable group selected from the group consisting of $\text{Si}((\text{O})_p\text{R}^3)_3$, where p is independently 0 or 1; $\text{C}(\text{O})_q((\text{O})_p\text{R}^3)_r$, wherein p is independently 0 or 1 and when q is 1, r is 1, and when q is 0, r is 3; R^3 is independently selected from the group consisting of C_1 - C_{16} linear or branched, substituted or unsubstituted alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, alkaryl, aralkyl, and aryl, and mixtures thereof; the parameter $d_{\text{Z-H}}$, the center to center distance from the phenolic oxygen atom or

the thiophenolic sulfur atom to the H atom of -X"-H, must satisfy the following criterion in at least one rotational conformation of the compound II:

$$1.0 \text{ \AA} \leq d_{Z-H} \leq 4.0 \text{ \AA};$$

wherein when G is H or replaced by H, the pK_a of the substituted phenol or thiophenol, or resulting substituted phenol or thiophenol is from about 5 to about 11; and

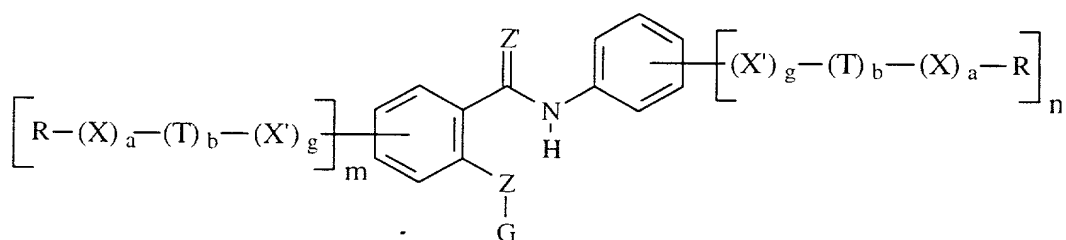
- B) a surfactant wherein the ratio of the weight of the surfactant divided by the weight of the substituted compound II is greater than or equal to 1.0 and further provided that the surfactant is 1 wt% or greater of the composition; and
- C) from 0.5% to 90% of a solvent whose Hildebrand solubility parameter d_S (cal/cm³) meets the following criterion: $5 < d_S < 20$,

further provided that a 10wt% aqueous solution of this composition has a $pH \geq (pK_a - 1)$ where pK_a is the calculated pK_a of the substituted phenol or thiophenol or, when G is not H, the resulting substituted phenol or thiophenol of formula II.

7. The antibacterial composition according to Claim 6 wherein the antibacterial composition exhibits Dilute Efficacy according to the Dilute Efficacy Test.

8. The antibacterial composition according to Claim 6 wherein G is $C(O)_q((O)_pR^1)_r$, wherein p is independently 0 or 1 and when q is 1, r is 1, and when q is 0, r is 3; R^1 is independently selected from the group consisting of C_1 - C_{16} linear or branched, substituted or unsubstituted alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, alkaryl, aralkyl, and aryl, and mixtures thereof; and wherein the antibacterial composition further comprises hydrogen peroxide or hydrogen peroxide releasing agents.

9. A bacteria-reducing system comprising a compound of formula I,



I

wherein m is an integer from 0 to 4; n is an integer from 0 to 5; the sum of m+n is greater than zero; a is 0 or 1; b is 0 or 1; g is 0 or 1; when b is 0, one of a and g must be 0; Z and

Z' are independently selected from O and S; X and X', when present, are selected from O, S, and NR^1 , where R^1 is independently selected from the group consisting of H, C_1 - C_{16} linear or branched, substituted or unsubstituted alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, alkaryl, aralkyl, and aryl; T, when present, is selected from $\text{C}=\text{O}$, $\text{C}=\text{S}$, $\text{S}=\text{O}$, and SO_2 ; when T is $\text{S}=\text{O}$ or SO_2 , X and X' may not be S; when either a, b or g is 1 for a radical $\text{R}-(\text{X})_a-(\text{T})_b-(\text{X}')_g$, R for that radical is independently selected from the group consisting of H, C_1 - C_{16} linear or branched, substituted or unsubstituted alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, alkaryl, aralkyl, and aryl; when a, b and g are all 0 for a radical and neither Z nor Z' is S, R for that radical may be further selected from the group consisting of F, Cl, Br, I, CN, $\text{R}_2\text{N}\rightarrow\text{O}$, NO_2 ; when Z or Z' is S, R for that radical may be further selected from the group consisting of CN, $\text{R}_2\text{N}\rightarrow\text{O}$, NO_2 ; when all a, b and g are 0, at least one R must be non-H; further provided that the total number of halogen atoms in the molecule excluding any present in G does not exceed two; G is H, a suitable charge balancing counterion $(\text{M}^{n+})_{1/n}$, or a cleaveable group selected from the group consisting of $\text{Si}((\text{O})_p\text{R}^2)_3$, where p is independently 0 or 1; $\text{C}(\text{O})_q((\text{O})_p\text{R}^2)_r$, wherein p is independently 0 or 1 and when q is 1, r is 1, and when q is 0, r is 3; R^2 is independently selected from the group consisting of C_1 - C_{16} linear or branched, substituted or unsubstituted alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, alkaryl, aralkyl, and aryl, and mixtures thereof; wherein the bacteria-reducing system reduces bacteria on a substrate.

10. The bacteria-reducing system according to Claim 9 wherein the system further comprises at least one additional component selected from the group consisting of:

- a) a surfactant;
- b) a solvent;
- c) a perfume having a C log P greater than or equal to 2.0;
- d) an enzyme; and
- e) mixtures thereof.

11. The bacteria-reducing system according to Claim 10 wherein the ratio of the weight of the surfactant divided by the weight of the substituted salicylanilide compound of formula I is greater than or equal to 1.0 and further provided that the surfactant is 1 wt% or greater of the bacteria-reducing system.

12. The bacteria-reducing system according to Claim 10 wherein the solvent has a

Hildebrand solubility parameter d_S (cal/cm^3)^{1/2} of: $5 < d_S < 20$, and wherein a 10 wt% aqueous solution of the bacteria-reducing system has a $\text{pH} \geq (\text{pKa} - 1)$ where pKa is the calculated pKa of the compound of formula I wherein G is H or replaced by H.

13. The bacteria-reducing system according to Claim 9 wherein the substrate comprises a hard substrate selected from the group consisting of: utensils, dishes, cookware, pots, pans, skillets, baby bottles, baby nipples, glassware, dentures, kitchen cutting boards and mixtures thereof.

14. The bacteria-reducing system according to Claim 9 wherein the substrate comprises a soft substrate selected from the group consisting of: textiles, fabrics, garments, sponges, wash cloths, brushes, gloves, scouring pads, reusable wipes, animal and/or human skin and mixtures thereof.

15. The bacteria-reducing system according to Claim 9 wherein the bacteria are selected from the group consisting of: *Escherichia coli*, *Salmonella choleraesius*, *Listeria monocytogenes* and mixtures thereof.

16. A method for bacteria-reducing a bacteria-containing substrate comprising contacting the substrate with a bacteria-reducing system according to Claim 9.

17. The method according to Claim 16 wherein the substrate comprises a hard substrate selected from the group consisting of: utensils, dishes, cookware, pots, pans, skillets, baby bottles, baby nipples, glassware, dentures, kitchen cutting boards and mixtures thereof.

18. The method according to Claim 16 wherein the substrate comprises a soft substrate selected from the group consisting of: textiles, fabrics, garments, sponges, wash cloths, brushes, gloves, scouring pads, reusable wipes, animal and/or human skin and mixtures thereof.

19. A bacteria-reduced substrate made by the method of Claim 16.

20. A bacteria-reducing product comprising an antibacterial composition as claimed in Claim 1, said product further including instructions for using said antibacterial composition to reduce bacteria on a substrate in need of treatment, the instructions including the

step of contacting the substrate in need of treatment with the antibacterial composition such that said antibacterial composition treats said substrate.

21. A bacteria-reducing product comprising a bacteria-reducing system as claimed in Claim 9, said product further including instructions for using said bacteria-reducing system to reduce bacteria on a substrate in need of treatment, the instructions including the step of contacting the substrate in need of treatment with the bacteria-reducing system such that said bacteria-reducing system treats said substrate.

22. The bacteria-reducing product according to Claim 20 wherein said product is a liquid detergent composition.

23. The bacteria-reducing product according to Claim 21 wherein said product is a liquid detergent composition.

24. An antibacterial composition according to Claim 1 wherein m is an integer from 0 to 2; n is an integer from 0 to 2; g is 0; Z and Z' are O; and T, when present, is selected from C=O and SO₂.

25. The antibacterial composition according to Claim 24 wherein the compound is selected from the group consisting of 4-chlorosalicylanilide, 5-chlorosalicylanilide and mixtures thereof.

26. The antibacterial composition according to Claim 25 wherein the compound is 5-chlorosalicylanilide.